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Hawthornthwaite

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(54) **FENCE BRACKET AND FENCE BRACKET SYSTEM**

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Feb. 4, 2022 (GB) 2201487

(51) **Int. Cl.**

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E04H 17/20	(2006.01)
E04H 17/18	(2006.01)
E04H 17/16	(2006.01)

(52) **U.S. Cl.**

CPC ***E04H 17/22*** (2013.01); *E04H 17/163* (2013.01); *E04H 17/18* (2013.01); *E04H 17/23* (2021.01)

(58) **Field of Classification Search**

CPC E04H 17/20; E04H 17/22; E04H 17/23; E04H 17/009; E04H 17/18; E04H 17/185; E04H 17/16; E04H 17/161; E04H 17/163; E04H 12/22; E04H 12/2207; E04H 12/2215; E04H 12/2223; E04H 12/223; E04H 12/2238; E04H 12/2253; E04H 12/2261; E04H 12/2269

See application file for complete search history.

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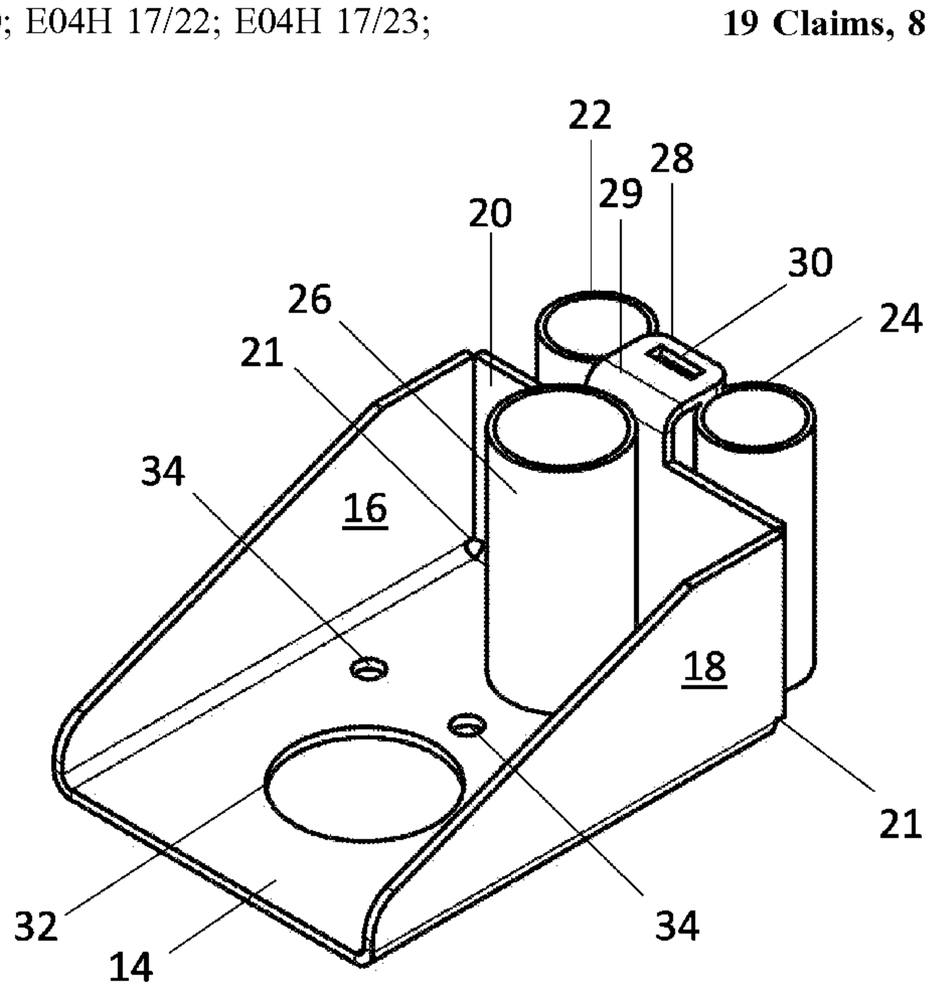
(57) **ABSTRACT**

A fence bracket (**10**), a fence bracket system, a kit of parts, a fence assembly and a method of manufacturing a fence bracket are described. The fence bracket (**10**) is suitable for use with a fence panel. The fence bracket has a body (**12**) having a base (**14**), a front wall (**20**), a first side wall (**16**) and a second side wall (**18**); and a support (**22**). The support (**22**) is provided on the front wall (**20**). The support (**22**) is configured to connect to a fence post. The front wall (**20**) has a region comprising an aperture (**30**) suitable for receiving an ancillary component (**70**).

19 Claims, 8 Drawing Sheets



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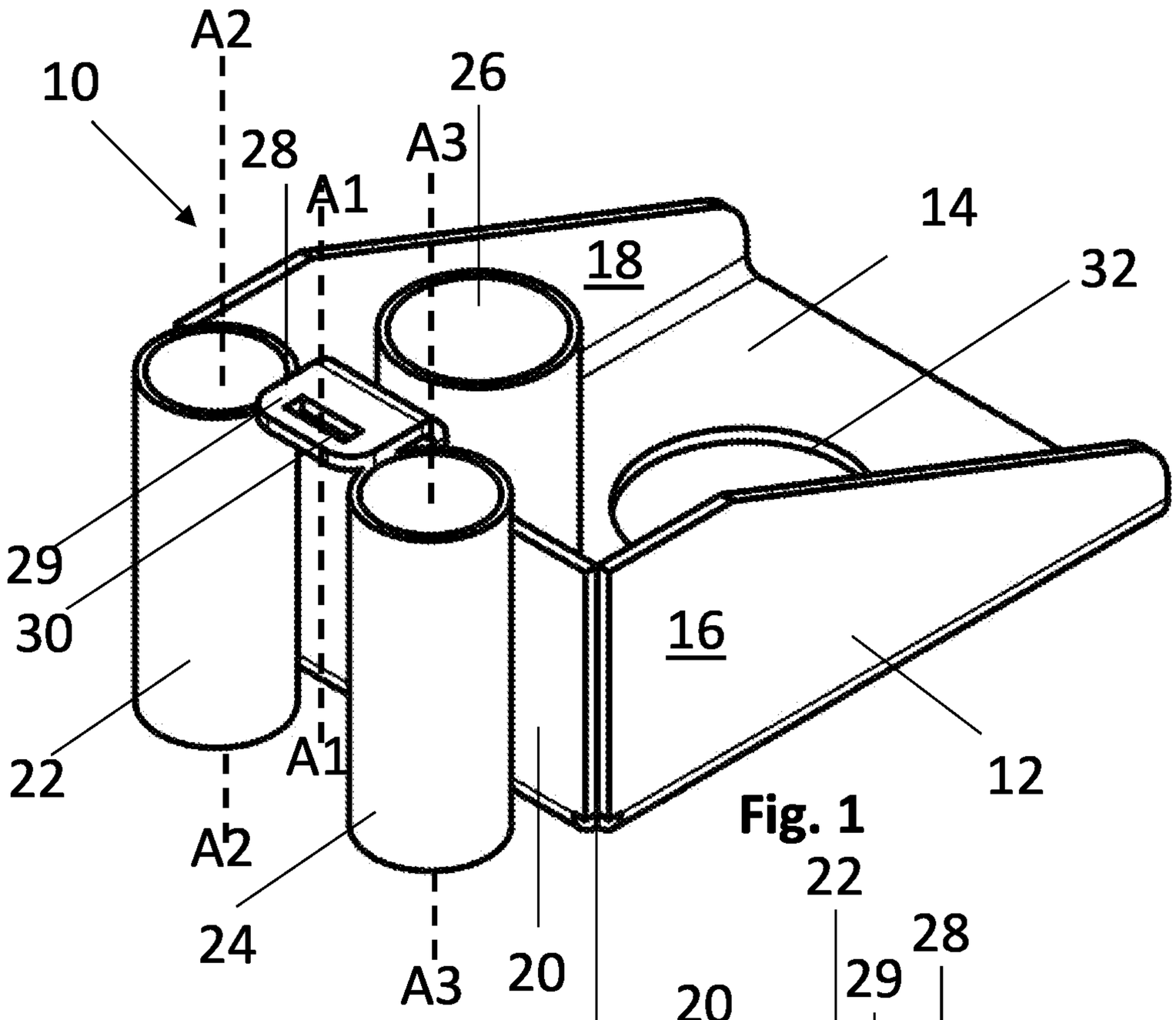
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Fig. 1

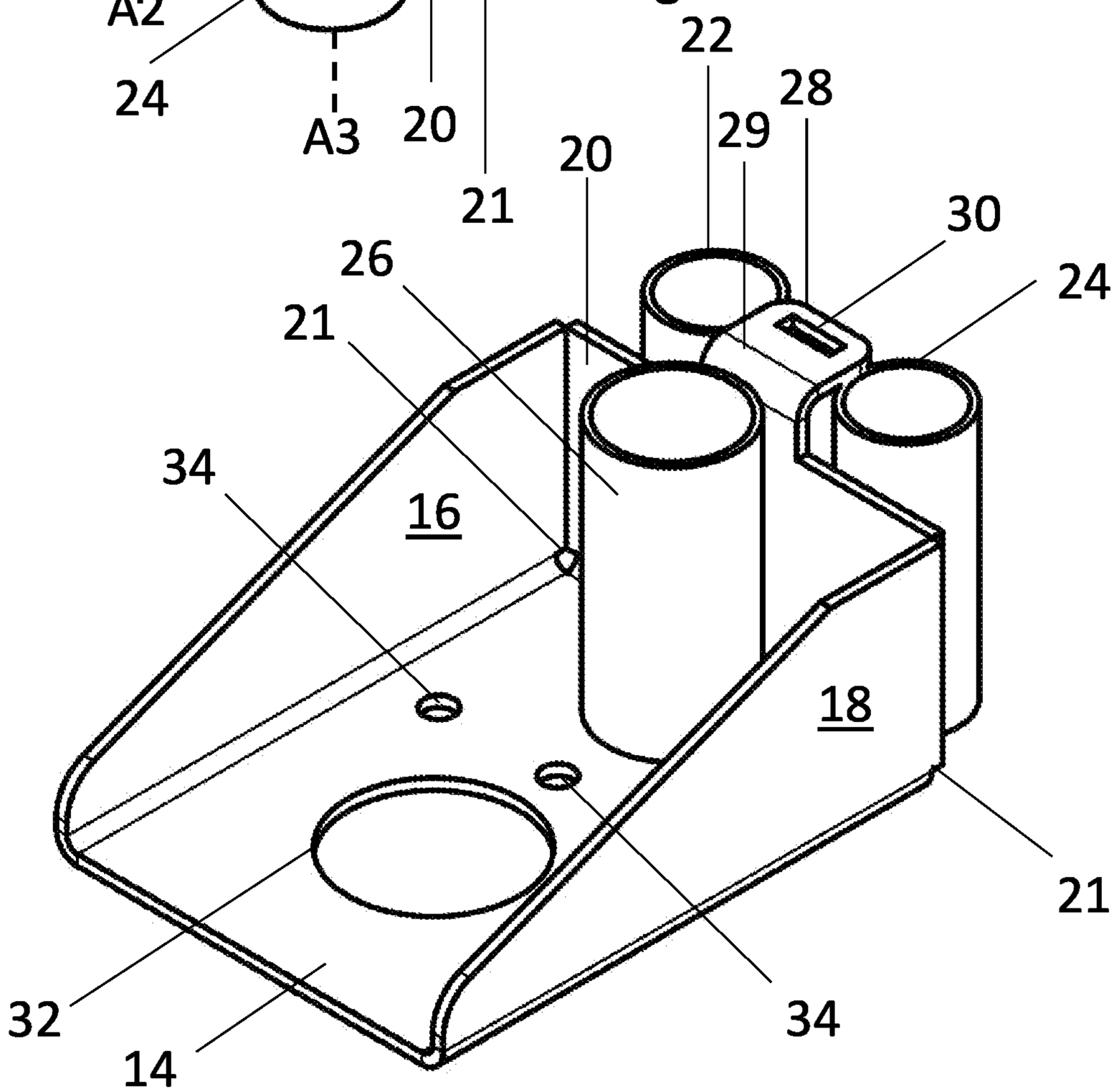
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Fig. 2

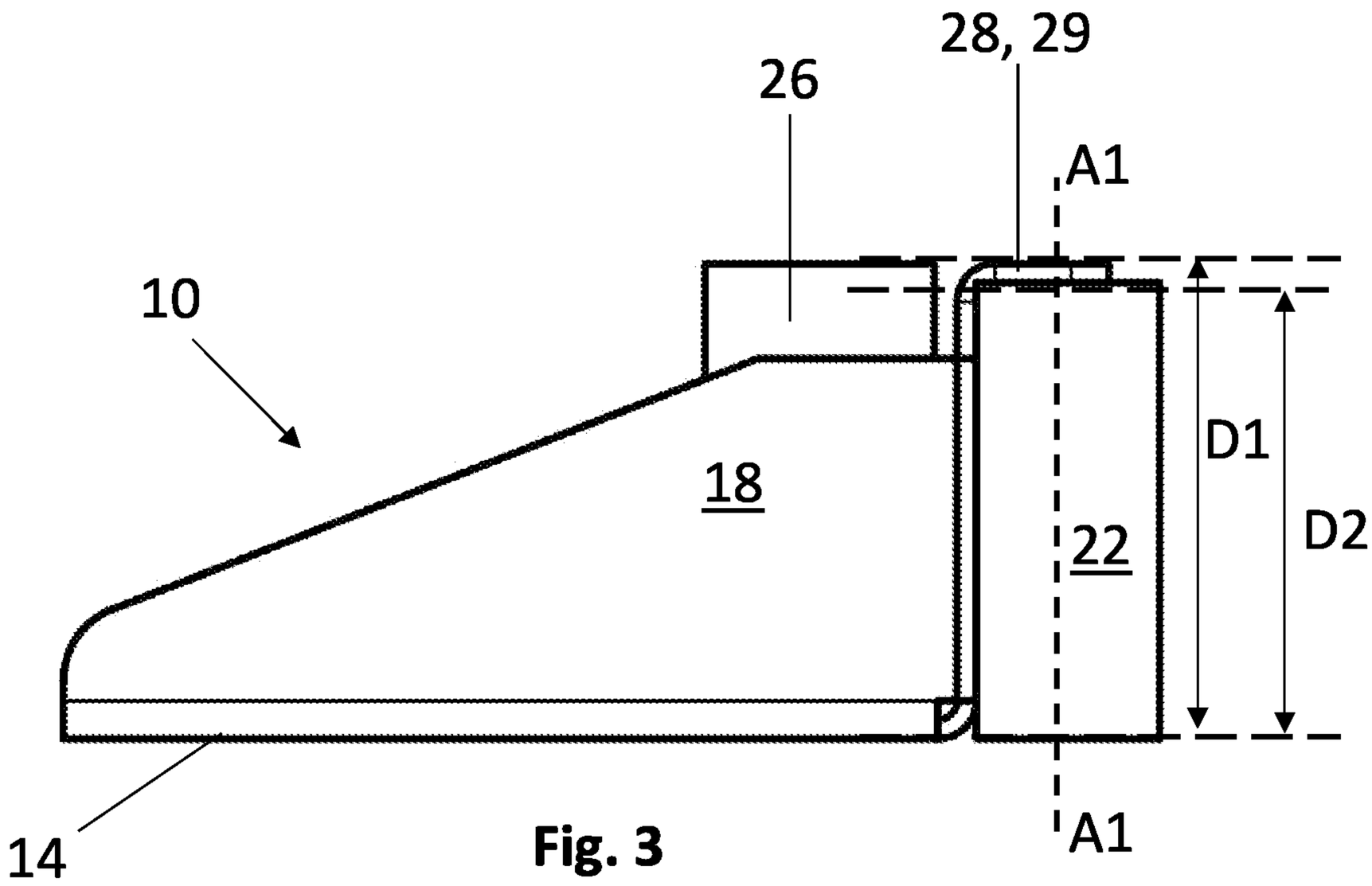

Fig. 3

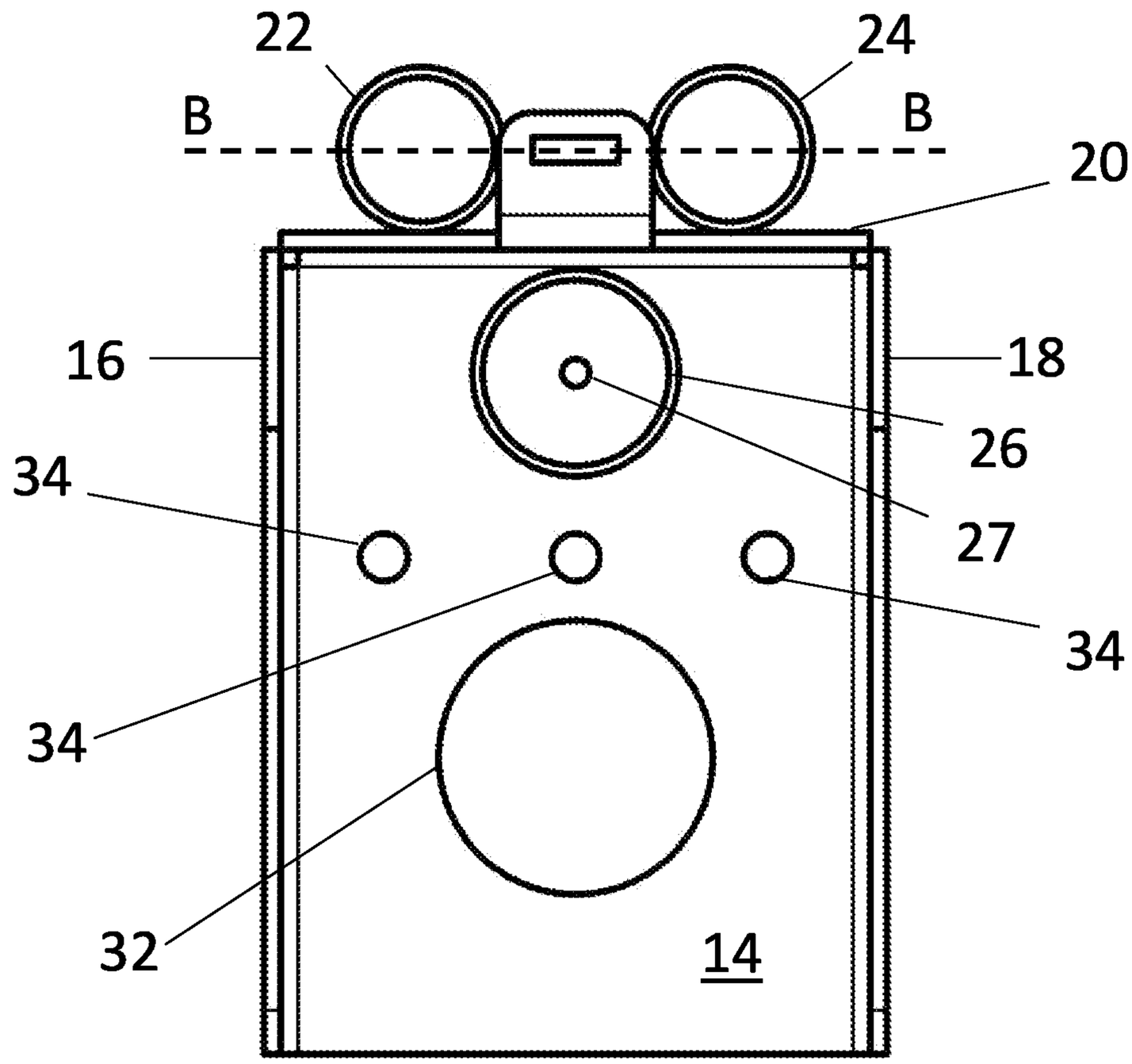

Fig. 4

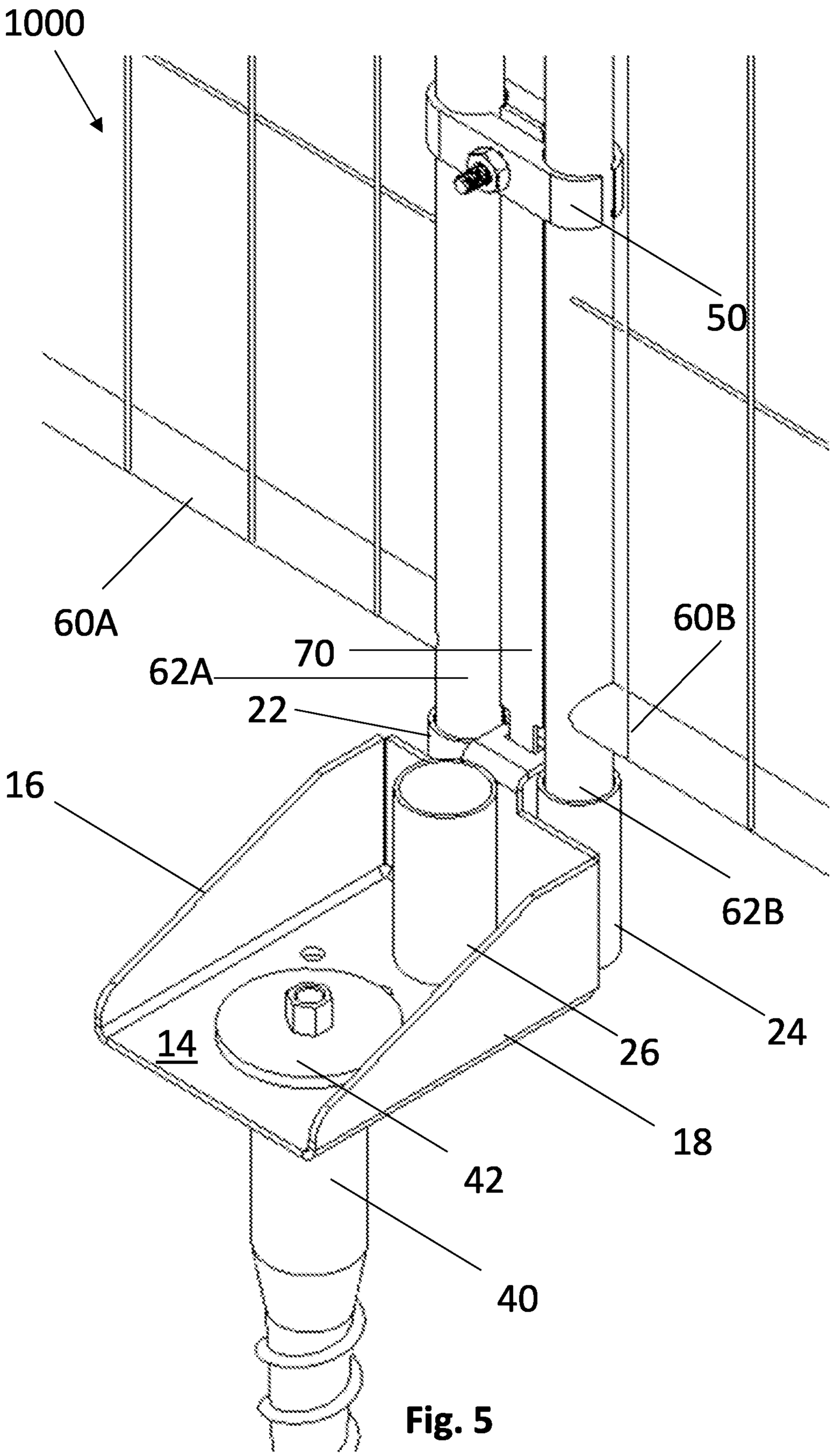

Fig. 5

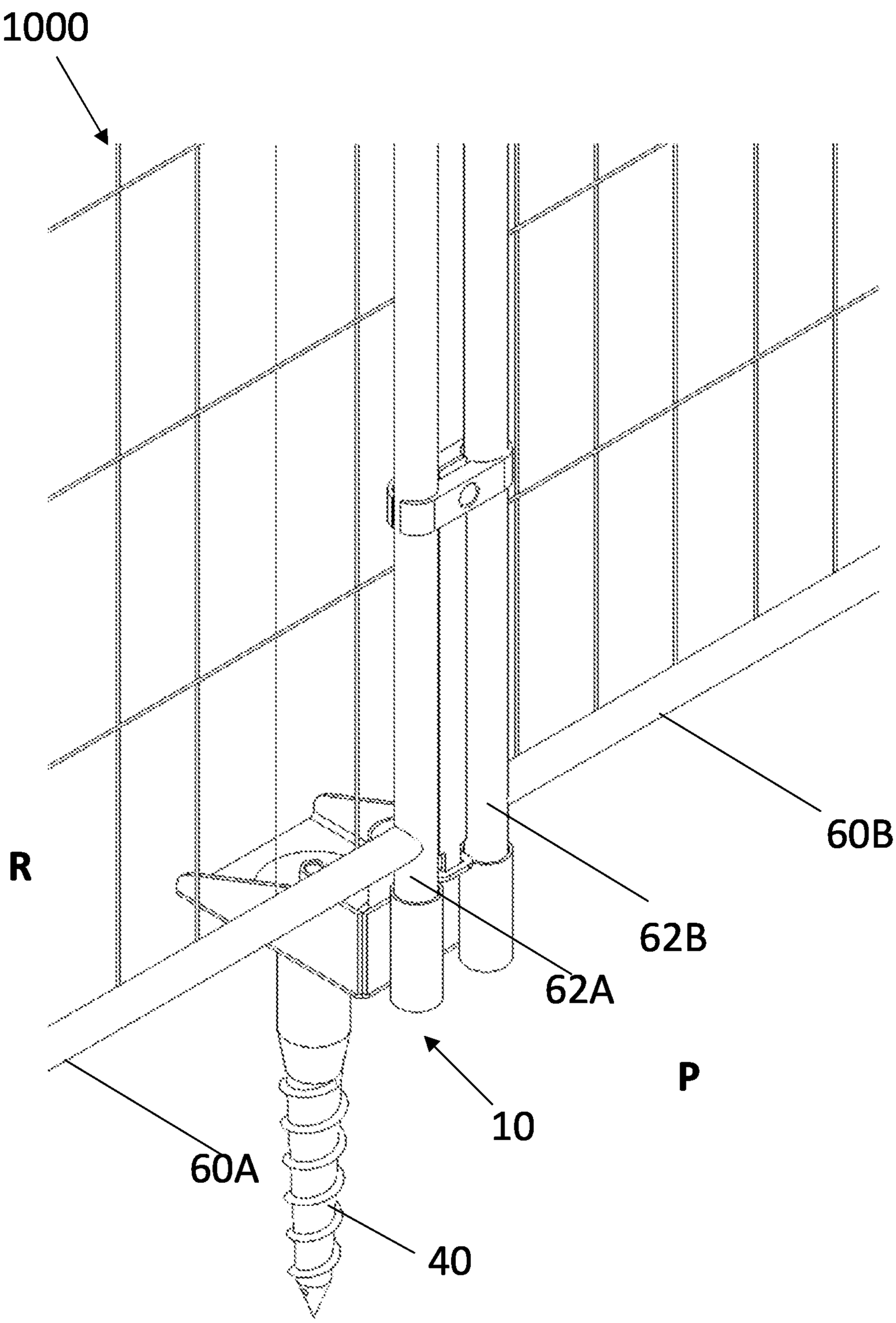

Fig. 6

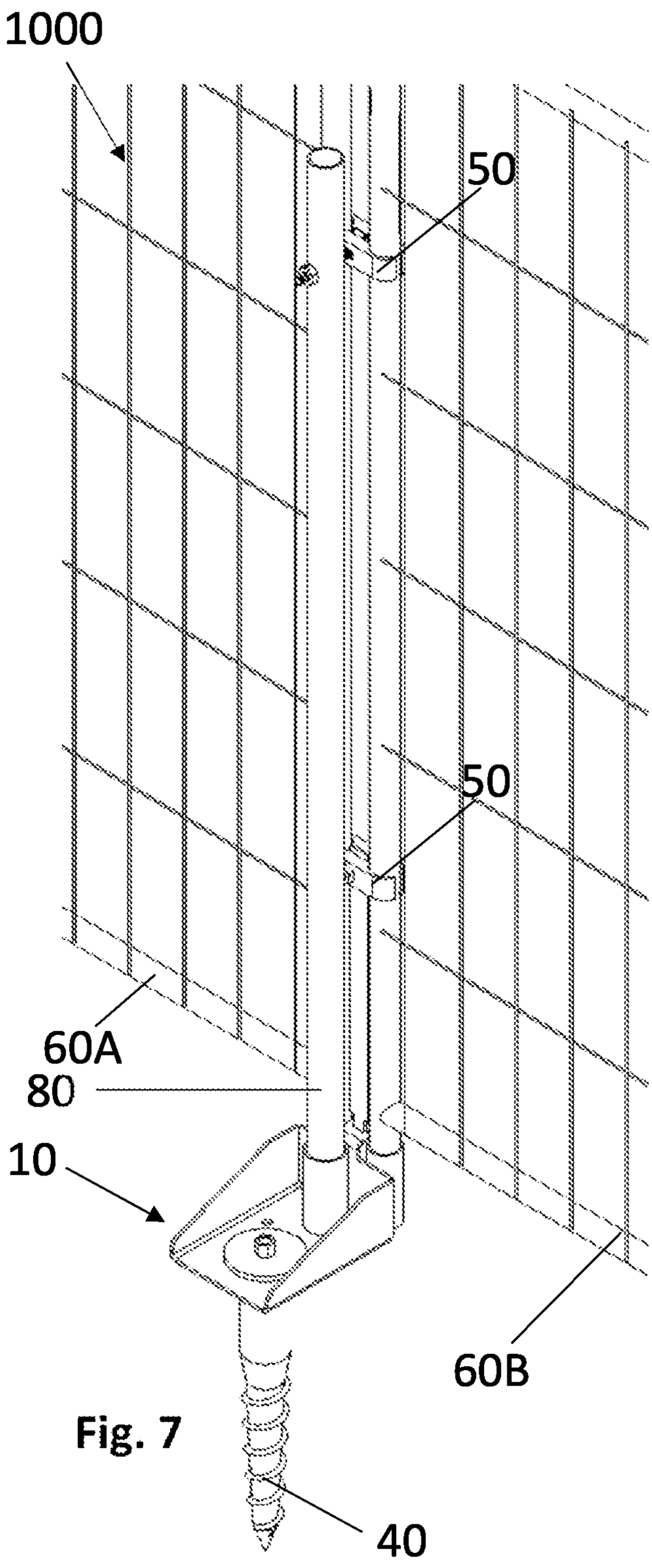

Fig. 7

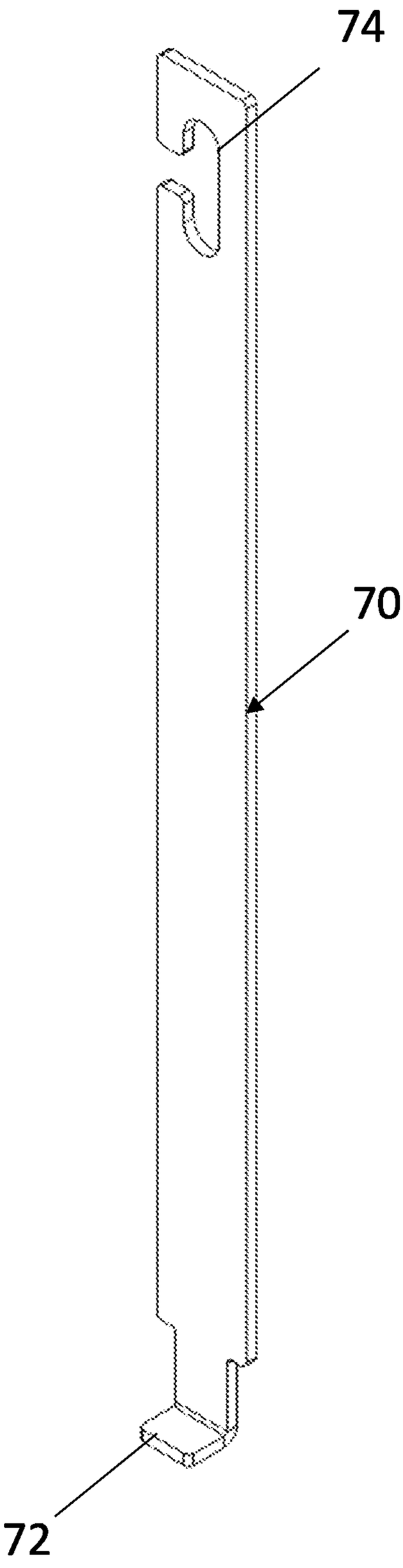

Fig. 11

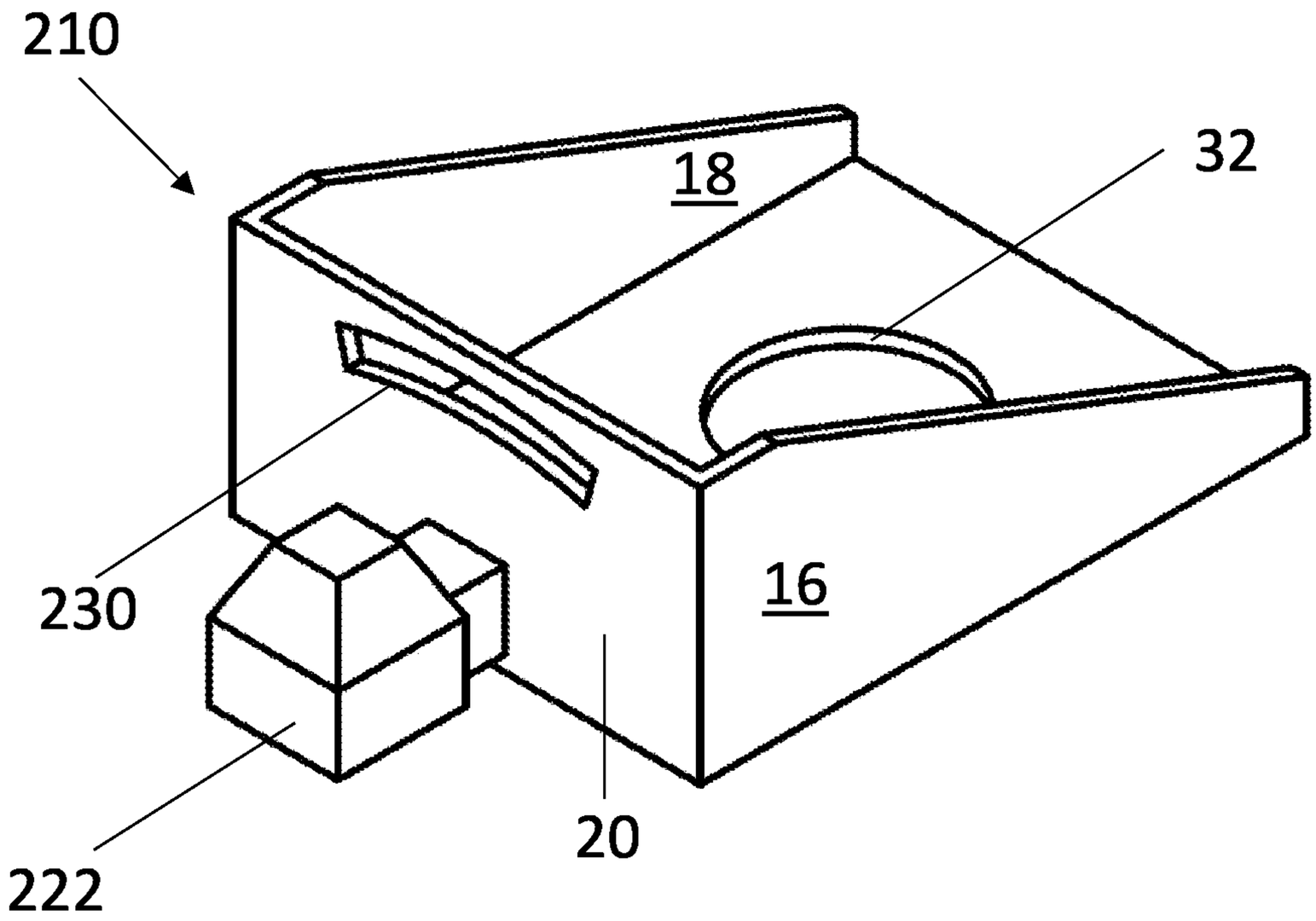

Fig. 8

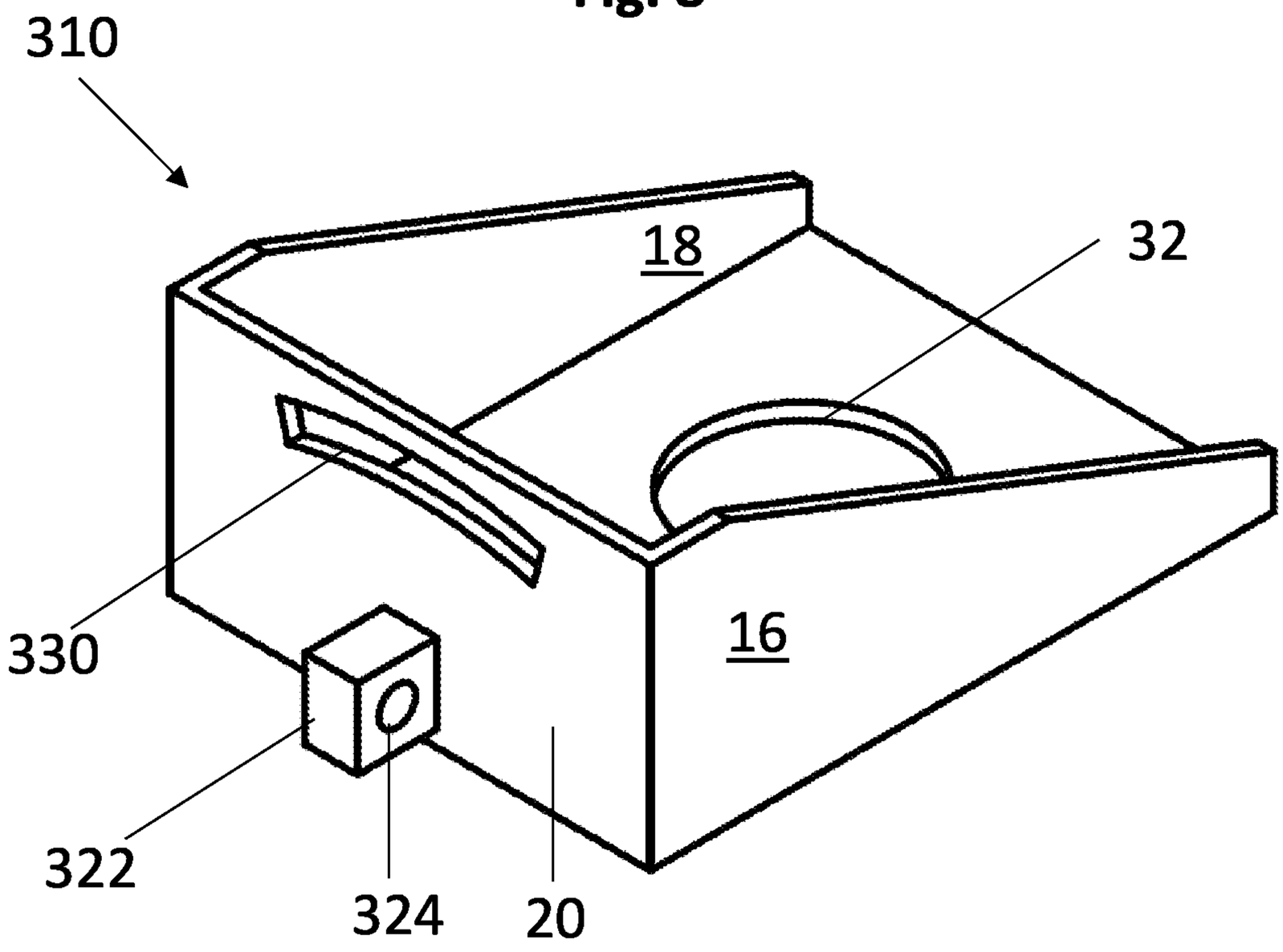

Fig. 9

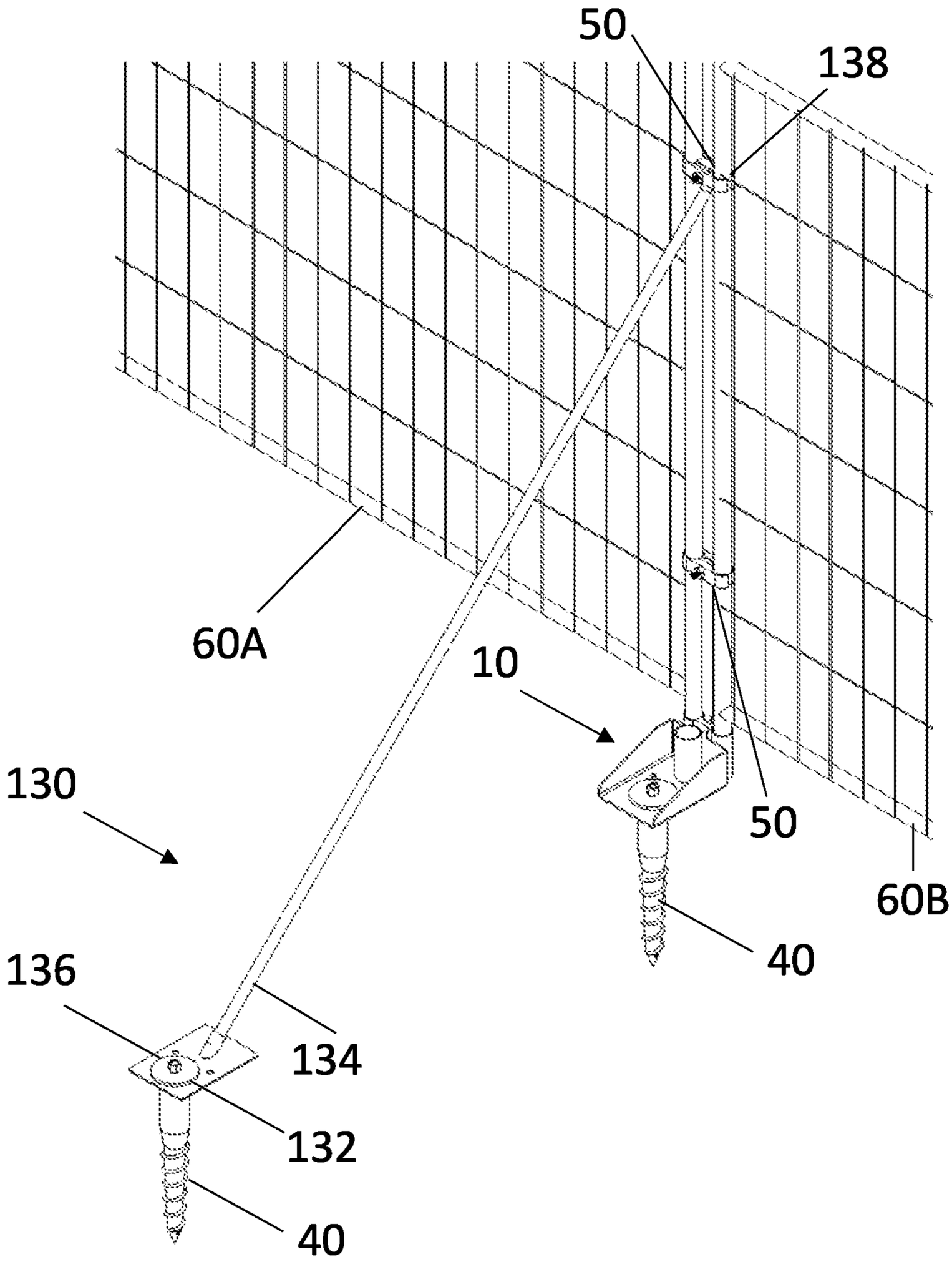

Fig. 10

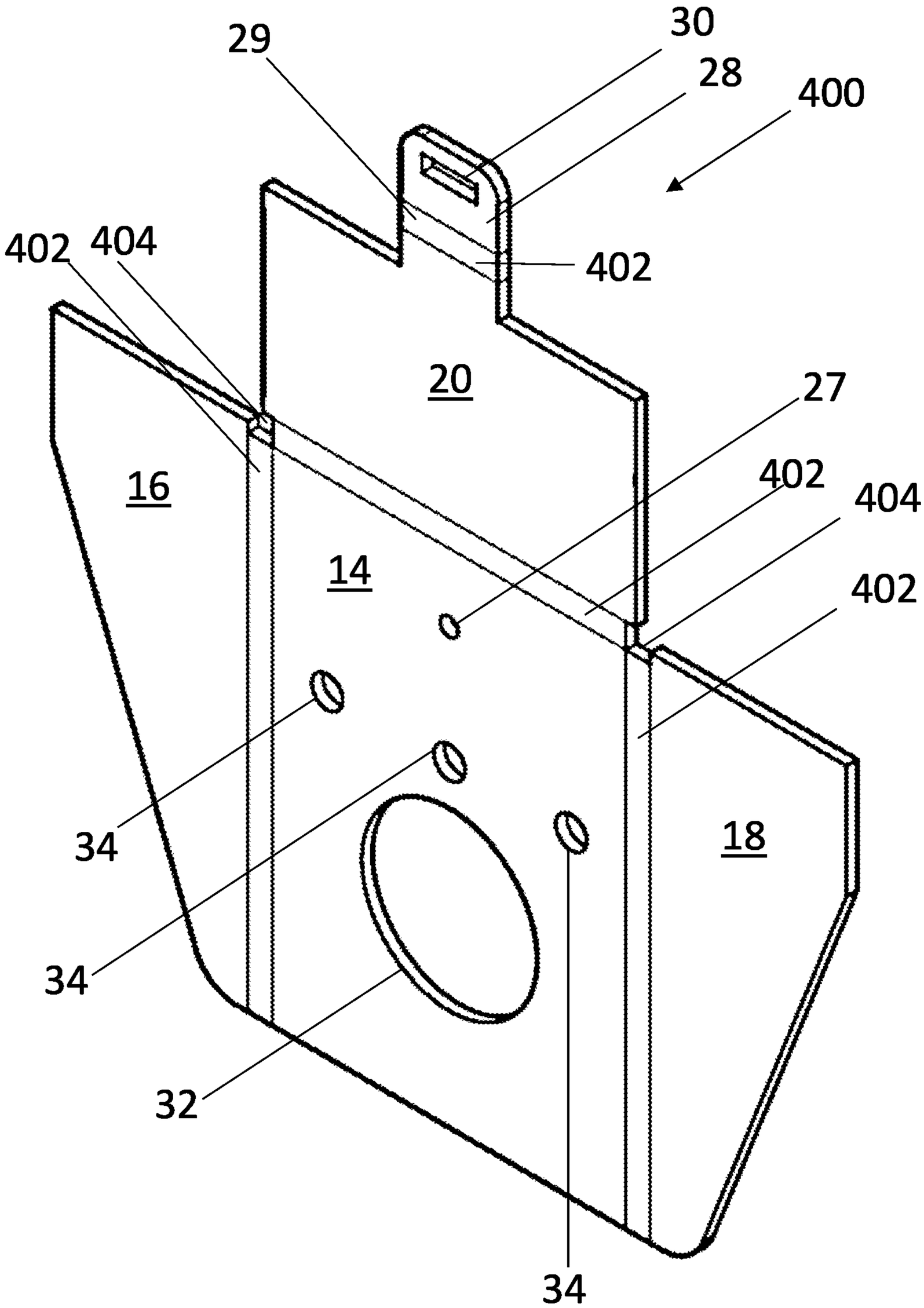

Fig. 12

FENCE BRACKET AND FENCE BRACKET SYSTEM

PRIORITY

The present application is related to, claims the priority benefit of, and is a U.S. continuation patent application of, U.S. patent application Ser. No. 17/890,169, filed Aug. 17, 2022, which is related to, and claims the priority benefit of, Great Britain patent application serial no. GB2201487.2, filed Feb. 4, 2022. The contents of each of these applications are incorporated herein directly and by reference in their entirety.

TECHNICAL FIELD

The present disclosure relates to a fence bracket. Particularly, but not exclusively, the disclosure relates to fence bracket, a fence bracket system, a kit of parts, a fence assembly and a method of manufacturing a fence bracket.

BACKGROUND

Temporary and semi-permanent fencing may be used in a variety of applications where a barrier is to be erected to cordon off or prevent access to an area. For example, open air music festivals often erect temporary fencing to prevent unauthorised access to the festival site. Other examples of uses of temporary fencing is to restrict access to potentially hazardous areas such as building sites.

An erected temporary fencing system therefore has a "restricted" side (within the fenced off area) and a "public" side (the area outside the fenced area).

One of the most common types of fences used for temporary fencing is the Heras™ fence. This type of fencing comprises a wire mesh panel attached to metal tube frame. The metal tube frame has two posts on which the fence panel stands. The fence posts may be retained into rubber or concrete blocks in use. In use a first fence's post is retained in a hole in the block and a post of a second fence is retained in another hole of the block. As a result, a number of fence panels can be joined together to form a long chain of fences by using a number of blocks. The fence post may be a fence panel post or a gate panel post.

Such blocks in use extend either side of a fence. As such they may present a tripping hazard for the public walking past the fence on the "public" side of the fence. High-visibility (hi-vis) block casings are generally employed to aid a person seeing such blocks. However, it may still be difficult to see such blocks at night or where the member of the public suffers from vision impairment.

Similarly, fencing may often be erected on sites which abut pavement, roads or tarmacked areas or other such built upon areas. A building or development site in an inner-city location abutting pavement is an example of such a scenario as there may be an uneven ground surface. As blocks extend either side of a fence the fence assembly must be staggered back from the edge of the full area of the development such that any change in height between the pavement and the internal area of the development site does not negatively effect the fence. If a block is placed across pavement and lower ground of the development site then the fence assembly may be disposed at an angle increasing likelihood of tipping (especially under side loading from wind for example).

Further, such blocks tend to be heavy and bulky as they made from concrete. As regulations tend to limit the maximum weight that a person can lift unaided there is often the need for installation of blocks to be carried out by at least two installers.

Even with such heavy blocks there is the potential for the fence posts to topple over due to wind loading. Whilst the mesh in an individual fence panel has a small surface area, due to the number of panels in a fence system and the metal tubular frame it offers a significant cross-sectional area for wind loading.

Further, it is relatively easy to lift such fence panels out from blocks. It is also relatively easy to push or manoeuvre blocks as they are generally not fixed to the ground.

Moreover, blocks are placed on the ground requiring installers to often bend down to fix the blocks in place. Such bending can place strain on the installer's back potentially causing injury.

The present disclosure aims to improve on the fencing systems known in the art.

BRIEF SUMMARY

Aspects and embodiments of the invention provide a fence bracket, a fence bracket system, a fence assembly, a kit of parts and a method of manufacturing a fence bracket as claimed in the appended claims.

According to an aspect of the invention, there is provided a fence bracket. The fence bracket is suitable for use with a fence panel. The fence bracket comprises:

a body having a base, a front wall, a first side wall and a second side wall; and

a support;

wherein the support is provided on the front wall; and

the support is configured to connect to a fence post; and

wherein the front wall has a region comprising an aperture suitable for receiving an ancillary component.

Advantageously the fence bracket comprises at least one sidewall. Preferably the fence bracket comprises two sidewalls. The sidewalls increase the strength of the fence bracket. The fence bracket may thereby withstand greater loads, which may be encountered due to high winds effecting a fence installed using the bracket, and thereby transferred through the bracket and/or other sources of adverse pressure on such a fence.

The slot allows for the connection of an ancillary component to the fence bracket. The ancillary component allows the arm or locking strap to be connected to the fence bracket which enables the fence to be locked together above the bracket. The aperture could also be used to connect a fence panel joining bracket to the fence bracket.

The provision of the support on the front wall of the bracket reduces the footprint of the fence bracket. The support being in front of the front wall (in use) means that the fence bracket does not extend onto the "public" side of the fence. As such the fence bracket presents less of a tripping hazard to the public.

The front wall acts as a barrier preventing someone reaching into the inner parts of the fence bracket located on the "restricted" side of the fence bracket in use.

Preferably the region comprises a tab extending from the front wall. The tab may be used to abut against a fence joining panel bracket between the top of the inline support tubes and the tab. Such an implementation could be used to lock the fence posts to the fence bracket to prevent unauthorised removal.

The tab may comprise a portion to attach an ancillary component.

The tab may extend away from the front wall towards the "public" side or away from the wall towards the "restricted" side or the tab may extend upwards from the front wall.

Preferably a portion of the tab is bent such that the portion extends substantially perpendicularly from the front wall. The tab is bent such that it preferably extends away from the wall approximately or substantially perpendicular.

Preferably the aperture is located on the tab. Locating the aperture on the tab makes it easier to connect ancillary components for an installer.

Preferably the base further comprises a portion suitable for receiving a ground penetrating member for fixing the fence bracket to soft ground. The ground penetrating member may be a ground screw. The ground penetrating member is used to fix the fence bracket to soft ground such as dirt.

Preferably the body further comprises an ancillary support connected to the base and/or front wall; wherein the ancillary support is suitable to receive an ancillary support component. The ancillary support is used to connect further ancillary components to the bracket such as further stabilizers, braces, flag poles, another fence, scaffold poles, or other suitable apparatus. The ancillary support is preferably welded to the base and front plate. Preferably the ancillary support is welded just below tab. Preferably the weld is two points on either side of the ancillary support. Preferably the weld is 25 mm on both sides of the tab.

Preferably the fence bracket further comprises at least one hole suitable for receiving an anchor bolt for fixing the fence bracket to hardstanding or hard ground. The fence bracket may be used on hard ground to fix a fence where a ground screw or ground penetrating member cannot be employed.

Preferably the base does not extend past:

the front wall or

the support.

Advantageously, as the base doesn't extend into the "public" side of the fence. This reduces the likelihood of the public tripping up over the base plate when the bracket is in use. Optionally where a second support is used the base may not extend past the second support.

Preferably the fence bracket further comprises a second support provided on the front wall and wherein the second support is configured to connect to a fence post.

Preferably, the aperture has an axis (**A1**) that is coplanar with an axis (**A2**) of the first fence support and coplanar with an axis (**A3**) of the second fence support. The aperture being on the same plane of the axis of the support posts means that the arm or locking strap in use is almost vertical and flush with the fence panel siding. Having the arm vertical and flush makes it harder to get through a fence assembly in use as there is littler area to axis through the arm. Further it makes the fence panel joining bracket to fix to fence supports as the aperture will be in-line with the fence tubes.

The first and second supports are tubes suitable for receiving a fence post. The tubes surround and support a fence panel post. The posts are often the weakest portion of the fence panel and may be liable to damage due to loading on the fence. Receiving the fence posts in tubular supports reduces the likelihood of damage to fence posts.

Preferably the first and second supports are configured such that in use the fence posts are uncovered over a distance between the bottom of the first and second supports and the ground to enable said fence posts to be fastened together with a fastener. In use lifting the fence posts causes the fence panel joining bracket or fastener to abut the bottom of the supports preventing them from being lifted out of the fence bracket.

Preferably the top surface of the first and second fence post supports is below the tab such that in use the fence posts received by the first and second supports are uncovered enabling said fence posts to be fastened together with a fastener such that pulling upward engages the fastener with the tab preventing fence post removal. In use lifting the fence posts causes the fence panel joining bracket or fastener to abut the tab preventing them from being lifted out of the fence bracket.

According to another aspect a fence bracket system is provided. The fence bracket system comprising:

a fence bracket as described previously; and

further comprising at least one an ancillary component.

Preferably the at least one ancillary component is at least one:

an arm; and/or

a fastener and/or

a levelling device.

The arm is preferably a locking strap.

Preferably, the fence bracket system further comprises an ancillary support component; wherein the component is one of:

a stabilizer; or

a brace; or

a camera pole; or

a solar light; or

a flag pole; or

a fixtures.

Preferably the at least one ancillary component is an arm and wherein the arm comprises an aperture engaging portion disposed at one end of said arm configured to removably engage aperture of the bracket.

The arm in use can act as a further physical barrier between the "public" and "secure" sides of the fenced off area. The arm fits into the gap between the first and second fence panel preventing access by someone trying to fit their hand through. The arm is removably engageable with the fence bracket.

Preferably the arm further comprises an arm aperture disposed at a second end of said arm suitable for receiving a fastener. The fastener may be used to connect the arm to a fence panel and thus the fence panel to the bracket.

Preferably the at least one ancillary component further comprises a fastener.

According to a further aspect a kit of parts comprising the components of the fence bracket system of a previous aspect.

Preferably the kit of parts of claim further comprises at least one fence panel.

According to another aspect a fence assembly is provided. The fence assembly comprising:

a fence bracket system of a previous aspect;

at least one fence panel.

Alternatively, the fence assembly comprises:

a fence bracket system of a previous aspect;

at least one fence post.

According to another aspect a method of manufacturing a fence bracket is disclosed. The fence bracket comprising:

cutting a shape from a material sheet;

folding the shape to form a body comprising a base, a front wall a first side wall and a second side wall;

cutting an aperture into the material sheet;

connecting the front wall to the first and second side walls; and

connecting a support to the body.

Preferably the cutting is made by laser cutting.

Preferably the method of manufacturing a fence bracket further comprises:

welding the support to the body.

Preferably the method of manufacturing a fence bracket further comprises:

forming a tab with the aperture disposed thereon.

BRIEF DESCRIPTION OF THE DRAWINGS

One or more embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

FIG. **1** is a perspective view of a fence bracket;

FIG. **2** is a second perspective view of the fence bracket of FIG. **1**;

FIG. **3** is a side on view of the fence bracket of FIG. **1**;

FIG. **4** is a plan view of the fence bracket of FIG. **1**;

FIG. **5** is a perspective view from a "restricted" side of a fence bracket assembly incorporating a fence bracket system including the fence bracket of FIG. **1**;

FIG. **6** is a perspective view from a "public" side of the fence assembly of FIG. **5**;

FIG. **7** shows a perspective view of an alternative fence assembly from the "restricted" side;

FIG. **8** shows a perspective view of a further fence bracket;

FIG. **9** shows a perspective view of a further fence bracket;

FIG. **10** shows a perspective view of an alternative fence assembly from the "restricted" side;

FIG. **11** shows a component of the fence bracket system of FIG. **5**; and

FIG. **12** shows a cut shape of material forming a body.

As such, an overview of the features, functions and/or configurations of the components depicted in the various figures will now be presented. It should be appreciated that not all of the features of the components of the figures are necessarily described and some of these non-discussed features (as well as discussed features) are inherent from the figures themselves. Other non-discussed features may be inherent in component geometry and/or configuration. Furthermore, wherever feasible and convenient, like reference numerals are used in the figures and the description to refer to the same or like parts or steps. The figures are in a simplified form and not to precise scale.

DETAILED DESCRIPTION

For the purposes of promoting an understanding of the principles of the present disclosure, reference will now be made to the embodiments illustrated in the drawings, and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of this disclosure is thereby intended.

With reference to FIGS. **1** to **9**, a fence bracket **10** is disclosed for use as part of a fence assembly **1000**. The fence bracket **10** is suitable for use with temporary fence panels **60**A, **60**B such as the fence panel produced by Heras™. However, the present fence bracket **10** may be employed with any suitable temporary or permanent fencing as required by the installer or their present need.

The fence bracket **10** in use as part of a fence assembly **1000** defines a "public" side which is not fenced off or restricted and a "restricted" side in which the fencing assembly **1000** restricts public access to an area. The "public" side is denoted by the letter P and the "restricted" side is denoted by the letter R. These areas are shown in FIG. **6**.

The fence bracket **10** is shown in FIG. **1**. The fence bracket **10** comprises a body **12**. The body **12** is made up of a base **14** and a front wall **20**. The front wall **20** may be a substantially vertical region **20**. The body **12** shown in FIG. **1** further has sidewalls **16** and **18**. The sidewalls **16**, **18** connect to the front wall **20** and provide structural reinforcement to the front wall **20**. The sidewalls may taper towards the base **14** from a maximum height at or adjacent to the front wall **20** as shown in FIGS. **1-3**. The fence bracket **10** is therefore arranged as a box section.

Vertical may be taken to mean "substantially vertical" or "approximately vertical" throughout. Similarly, perpendicular may be taken to mean "substantially perpendicular" or "approximately perpendicular" throughout. Similarly, co-planer may be taken to mean "substantially co-planer" or "approximately co-planer".

The front wall **20** is preferably a wall as shown in FIG. **1**. The front wall **20** connects to the base **14** at the bottom of the front wall **20**.

The body **12** may have a drainage hole **21** located at the intersection of the base **14**, first side wall **16** and the front wall **20** as shown in FIGS. **1** and **2**. The drainage hole permits rainwater or other fluid to drain out of the fence bracket **10** and not sit in the internal cavity of the body **12**.

The body **12** may have a drainage hole **21** located at the intersection of the base **14**, second side wall **18** and the front wall **20** as shown in FIG. **2**. The drainage hole permits rainwater or other fluid to drain out of the fence bracket **10** and not sit in the internal cavity of the body **12**.

Alternatively, the front wall **20** may be a strip or tab extending from the base. In such embodiments the body **12** may or may not comprise sidewalls **16**, **18**.

The front wall **20** has connected to it a first support **22** and optionally a second support **24**. The embodiment shown in FIG. **1** has both a first and second support **22**, **24**. The first support **22** defines an axis A**2**. The second support defines an axis A**3**. The first and second supports **22**, **24** are preferably tubes as shown in FIGS. **1** and **2**. The tubes are sized to receive fence posts **62**A, **62**B of a temporary fence panels **60**A, **60**B (or gate panel post of a gate panel) within the inner diameter of the tube. The first and second supports **22**, **24** are connected to the body **12** at the front wall **20**, preferably such that they cannot be removed. In alternative embodiments, the first and second supports **22**, **24** may be detached from the front wall **20** and body **12**.

The first and second supports **22**, **24** preferably extend such that the bottom of the first and second supports **22**, **24** touch the ground in use.

Alternatively, the first and second supports **22**, **24** may not extend such that the bottom of the first and second supports **22**, **24** touch the ground in use. In such an embodiment there is a distance D**3** between the bottom of the first and second supports **22**, **24** and the ground to enable the fastening of two fence posts together with a fastener **50** in use. The distance D**3** may be the height of a fence panel joining bracket **50**, an example of such a bracket **50** is shown in FIG. **5**. The ability to lock the fence posts **62**A, **62**B adds additional security as the fence posts **62**A, **62**B are locked together using a fastener **50** which cannot be pulled out of the fence bracket **10**. If someone were to try and pull the fastened fence posts **62**A, **62**B out of the fence bracket **10** the fastener **50** would abut the bottom of the first and second supports **22**, **24** preventing the fence panels **60**A, **60**B from being lifted further.

Alternatively, the first and second supports **22**, **24** may not be tubes but may be posts that a fence post **62**A, **62**B is placed upon.

As shown in FIGS. **1** and **2** the front wall **20** comprises an aperture **30**. The aperture defines an axis A**1**. The aperture **30** is suitable for receiving an ancillary component **70** such as arm **70** shown in FIGS. **5-7**. The arm may also be referred to as a locking strap **70**. The aperture **30** is preferably configured to retain an aperture engaging portion **72** of the arm **70**. The aperture **30** is therefore complementary to the aperture engaging portion **72**.

The aperture **30** may be disposed on tab **28** as shown in FIGS. **1** and **2**. Such a tab extends from the front wall **20**. The tab **28** may extend vertically from the front wall **20**. Alternatively, the tab **28** may extend perpendicularly from the front wall **20** into the "public" side of the fence bracket **10** (the side with the first and second fence post supports **22**, **24**) or conversely the tab **28** may extend perpendicularly from the vertical wall **20** into the "restricted" side of the fence bracket **10**. Alternatively, multiple tabs **28** may be provided in two or more of the locations described to permit greater variability of use by the installer.

In the embodiment shown in FIG. **1**, the tab **28** extends vertically from the front wall **20** and the tab further comprises a bent portion **29**. The bent portion **29**, as shown in FIGS. **1** and **2**, is a region of the tab **28** that is substantially perpendicular from the front wall **20** and causes the aperture **30** to extend into the "public" side of the fence bracket **10**. Alternatively, the bent portion **29** of tab **28** may extend into the "restricted" side of the fence bracket.

The tab **28** is preferably disposed, at a distance D**1** from the ground, above the top surface of the first and second fence post supports **22**, **24** as shown in FIG. **3**. The top of the first and second fence post supports **22**, **24** is at a distance of D**2** from the ground as shown in FIG. **3**. At the same time the tab **28** is located between the first and second supports **22**, **24** when viewed from above as in FIG. **4** to permit fence posts **62**A, **62**B to enter the fence post supports **22**, **24**. A fence post **62**A, **62**B may be a fence panel post or a gate panel post.

Optionally the distance D**1** may be greater still to permit the placing of a fastener **50** between the top of the first and second fence post supports **22**, **24** and the bottom of the tab **28**. In such a scenario the fence posts **62**A, **62**B received in the supports **22**, **24** can be fastened together (using a fence panel joining bracket **50** or other fastener **50**) below the tab **28**. Fastening in this manner prevents the fence posts **62**A, **62**B being removed from the fence bracket **10** as lifting fence panel **60**A, **60**B causes the fastener **50** to abut the tab **28** preventing the fence panel **60**A, **60**B being lifted any further.

Preferably the axis A**1** of the aperture **30** is coplanar with the axis A**2** of the first fence post support **22** and coplanar with an axis A**3** of the second fence post support **24**. The three axis A**1**, A**2**, A**3** thus sit substantially upon plane B as shown in FIG. **4**.

The base **14** of the fence bracket **10** has a portion **32** for receiving a ground penetrating member **40**. The portion **32** is preferably a hole or aperture **30** which is complementary to a ground penetrating member **40** as shown in FIGS. **5-7**. The aperture **30** is located on the "restricted" side of the fence bracket **10** such that it cannot be accessed from the "public" side when part of a fence assembly **1000** as shown in FIG. **6**.

In one embodiment the ground penetrating member **40** in FIG. **5** is a ground screw **40** also known as a ground penetrating screw. Ground screws **40** are provided with a thread that can be driven into soft ground, such as earth. Ground screws **40** are made of steel and preferably a galvanised steel. Ground screws **40** may include a fixture to aid driving the ground screw **40** into the ground. An example fixture is a hexagonal drive nut as shown in Figure. Ground screws **40** are typically driven into soft ground. For example, using a petrol driven nut wrench in combination with the hexagonal drive nut. Ground screws **40** provide a more secure hold than tent pegs or ground stakes for example.

The ground screw **40** is received in the hole **32** in use. The ground screw **40** has a flanged region or flange **42**. The flange **42** in use aids in spreading the pressure built up by screwing in the ground screw **40** into the ground across the base **14** of fence bracket **10**. The spreading of the pressure across the area of the base **14** adjacent the hole **32** and covered by the flange **42** helps to ensure a more stable bracket **10** when used in a fence assembly **1000**.

The body **12** may further comprise an ancillary support **26** connected to the base **14** and or front wall **20** as shown in FIG. **1**. The ancillary support **26** shown in FIG. **1** is a length of tubing. The ancillary support **26** may be used to connect ancillary support components **120** to the fence bracket **10**. An example ancillary support component **120** is the post **80** shown in FIG. **7**. The ancillary support **26** is complementary to the ancillary support component **120**. The ancillary support **26** may comprise means suitable for fixing the ancillary support component **120** into the ancillary support **26**. For example, the means may be a bolt, screw, clamp or other similar fastening means to fix the ancillary support component **120** into the ancillary support **26**.

The base **14** has a hole **27** which is a drainage hole. **27**. The hole **27** is located within the ancillary support **26** as shown in FIG. **4**. The hole **27** permits fluid such as water or rainfall to drain out of the ancillary support **26**.

Preferably the base **14** does not extend past the "front" of the front wall **20** (the side facing the "public" side) and/or the first support **22** and/or the second support **24**. The base **14** not extending past one or more of these components means that in use the base **14** does not extend onto the "public" side of the fence assembly **1000**. Advantageously this means it is less easy to lever up the fence bracket **10** and thus fence assembly **1000** using a lever, crowbar of the like. A further advantage is that the resulting fence assembly **1000** can be closer to the true extent of the development area rather than being staggered back as with prior art systems. Further, the fence bracket **10** is less likely to be a tripping hazard in such a scenario.

The base **14** may further comprise a hole **34**. The hole **34** is suitable for receiving an anchor bolt (also known as an expansion bolt). An anchor bolt may be inserted through hole **34** for securing the fence bracket **10** on hardstanding such as concrete or tarmacked surface. The hole **34** aligns with a hole in the hardstanding surface. The aligned holes then receive the anchor bolt. The anchor bolt is then actuated expanding into the hardstanding hole pulling the fence bracket **10** into closer contact with the hardstanding surface.

A number of holes **34** may be provided in the base. The number of holes **34** may be two or three or four or five or six or seven or eight or nine or ten. The number of holes **34** may be any number in the range two to ten or two to five. Preferably the number of holes **34** is three.

Where multiple holes **34** are provided on the base, they may be provided in a line as shown in FIG. **4**. Alternatively, the holes **34** may be provided in any such suitable configuration, for example: where n holes **34** are present (where "n"

is the number of holes **34**) the holes **34** may be arranged as the corners of an n-sided shape (regular or irregular) on the base **14**.

For example, where three holes **34** are present the holes **34** could be provided in a triangular arrangement or a linear arrangement; where four holes **34** are present the holes could be provided in a rectangular or square arrangement, etc. . . . .

The hole(s) **34** may alternatively be used to receive a tent pole or stake. The tent pole or stake may be used in combination with a ground penetrating member **40** to fix the fence bracket in place on soft ground.

The hole **32** adapted to receive the ground penetrating member is larger in diameter that the hole(s) **34** adapted to receive the anchor bolts.

The fence bracket system **100** will now be described in more detail with reference to FIGS. **1** to **7**. The fence bracket system **100** incorporates the fence bracket **10** as described above as well as one or more ancillary components **110** and/or one or more ancillary support components **120**.

The ancillary component **110** may be one or more of an arm **70**; or a fastener **50**; or a levelling device. The ancillary support component **120** may be one or more of: a stabilizer; or an brace; or an access door; or a camera pole; or a solar light; or a flag pole; or any other suitable fixtures. The arm **70** (also known as a locking strap **70**) is shown in FIG. **5** and FIG. **11** in a closer view. The arm **70** has an elongated body as shown in FIG. **5**. The arm **70** comprises an aperture engaging portion **72** disposed at one end of the arm **70** configured to engage aperture **30** of the bracket **10**. The arm engaging portion **72** is complementary to the aperture **30** of the region of front wall **20**. As shown in FIG. **11** the arm engaging portion **72** is preferably a tab **72**.

The arm has an arm aperture **74** disposed at a second end of the arm **70** as shown in FIG. **11**. The arm aperture **74** is configured to receive a fastener **50** as shown in FIGS. **5** and **6**. As shown in FIG. **5** the fastener **50** enables the fence panels **60**A, **60**B to be fastened together above the fence bracket **10**. Raising the location of the fastener **50** from near the ground adjacent the fence bracket **10** reduces the need for an installer to bend down to fix the fence panel joining bracket **50** to the assembly **1000**.

The fastener **50** is a fastening arrangement and preferably is a fence panel joining bracket **50**. The fence panel joining bracket comprises a first bracket, a second bracket a bolt and a nut. The first and second brackets act together to clamp two fence panel post **62**A, **62**B between them as shown in FIG. **5**.

The fence panel joining bracket **50** may be comprise an anti-tamper device to prevent unauthorised removal of the fence panel joining bracket **50**. The anti-tamper device may be an anti-tamper screw or bolt for example.

The arm **70** may be installed into the fence bracket **10** from either the front or rear of the fence bracket **10**.

The arm **70** may extend further than the example shown in FIG. **5**. The arm **70** may extend to the top of the fence panel **60**A such that the gap between fence panels **60**A and **60**B is completely covered by the arm **70**. In such an embodiment the arm **70** may have multiple arm apertures **74** to engage multiple fasteners **50** to fasten fence panels **60**A, **60**B together with the fence bracket **10**. An advantage of this longer arm **70** is that it reduces ease of access into the "restricted" area further. It also reduces the ability for tools to be slipped between the fence panel tubes which could be used to force the panels **60**A, **60**B apart.

Further, connections or apertures for fixing ancillary components may be provided on an arm **70**. The arm **70** may provide connections for bracings, fixtures, stabilisers or other such fixtures.

The stabilizer may be an apparatus which provides stability to the fence bracket system **100** and as such reduces the effect of sideloading or wind on the fence bracket system **100**.

The brace **130** may be an apparatus which provides stability to the fence bracket system **100** and as such reduces the effect of sideloading or wind on the fence bracket system **100**. The brace **130** is shown in FIG. **10**. The brace **130** comprises a brace plate **132** and a brace pole **134**. The brace plate **132** has a brace pole support **136**. The brace pole support **134** may be an angled piece of tubing as shown in FIG. **10** that the brace pole **134** is received within. The end of the brace pole **136** not connected to the support has a fixture **138** for fixing the brace poll **134** to the fence panel joining bracket **50**. The fixture **138** may be a tab or aperture or flattened portion of the brace pole **134** with an aperture to be received in a fence panel joining bracket **50**.

According to a further aspect a kit of parts is provided. The kit of parts comprises the fence bracket system **100** described above. Optionally the kit of parts may comprise at least one fence panel **60**A or at least two fence panels **60**A, **60**B, optionally the kit of parts may comprise a gate. According to a further aspect a fence assembly **1000** is described. The fence assembly **1000** comprises the fence bracket system **100** described above and at least one fence panel **60**A, **60**B. Optionally the fence assembly **1000** may comprise at least two fence panels **60**A, **60**B, optionally the assembly **1000** may comprise a gate.

Optionally one of the fence panels **60**A, **60**B may be exchanged for a gate with a gate panel post. The gate may be retained in the first or second support **22**, **24** and may be made to pivot in the respective support.

According to another aspect a method of manufacturing a fence bracket **10** is described.

The method of manufacturing a fence bracket **10** comprises cutting a shape from a material sheet. The cut shape **400** is shown in FIG. **12**. Preferably the material is a metal. Preferably the shape is cut from a flat metal sheet. The cutting may be achieved by means of laser cutting. Alternatively, the cutting may be done via other methods such as using a cutting torch or water jet cutting. The aperture **30** and holes **27**, **32**, **34** are also cut into the material sheet. The cut shape is then folded to form the body **12**. Folds are made at folding regions **402** indicated in FIG. **12**. The body is made up of a base **14**, a font wall **20** and a first side wall **16** and second side wall **18**. The front wall **20** is connected to the first and second side walls **16**, **18**; and a first support **22** is connected to the body **12**. Optionally where a second support **24** is required a second support may be also connected to the body **12**.

The front wall **20** is connected by a weld to the first and second side walls **16**, **18**. A portion of the wall is left unwelded towards the base **14** to form a hole **21** suitable for drainage. A notch or scallop **404** may optionally be provided. The notch **404** forms at least a portion of the hole **21** when the front wall **20** and one of the side walls **16** or **18** are folded together. The notch **404** provides a greater area hole **21**.

The first and second supports **22**, **24** are welded to the body **12**.

The sidewalls **16**, **18** are welded to the front wall **20**. The weld is made along the length of the front wall except at the point where the sidewalls meet both the base **14** and the front

wall **20**. At such a point no weld is made and a hole **21** is left to allow drainage out from the body **12**.

The method further comprises forming the tab **28** with the aperture **30** disposed thereon.

The fence bracket **10** is manufactured from metal. The metal may be steel. The steel may be a mild steel.

The fence bracket **10** may be surface finished. For example, the fence bracket **10** may have a powder coating applied. The powder coating assists in reducing risk of corrosion and at the same time can be in a bright colour to indicate to the public that a hazard may be present.

According to an alternative embodiment of the bracket, an alternative fence bracket **210** is described. The fence bracket **210** is shown in FIG. **8**. The fence bracket **210** is similar to the fence bracket **10** described above and therefore features in common are indicated with the same reference numbers. Alternative features are designated numbers in the two-hundreds. The fence bracket **210** may be used as part of any of the previous aspects.

The fence bracket **210** has a support **222** extending from the front wall **20** of the body **12**. The support **222** is a fence post support. The support **222** is shaped as shown in FIG. **8**, that is a box with a substantially square-pyramidal top. The shape is complementary to a square (or rectangular) fence post. In use a square fence post sits onto of the support **222**. An example of such a fencing system is the Fencesafe Temporary & Dulok fencing system using rigid mesh panels which this fence bracket **210** may be used with.

The fence bracket **210** has an aperture **230** disposed in the front wall **20** of the body **12**. The aperture **230** is disposed above the fence post support **222**. The aperture **230** is suitable to receive an ancillary component **110**. The ancillary component **110** may be one of those described above. Preferably the ancillary component **110** is an adjustable levelling bracket to aid the installation of the fence assembly. For example, the levelling bracket may be a Fencesafe levelling tool. The levelling tool may receive the fence post such that fence post is held at two points on the fence bracket **210** (the support **222** and levelling tool).

The fence bracket **210** may have other features in common with the fence bracket **10** described above. The fence bracket **210** for example may have least one hole **34** suitable for receiving an anchor bolt for fixing the fence bracket **10** to hardstanding or hard ground. The fence bracket **210** may also have for example a portion **32** in the base **14** suitable for receiving a ground penetrating member **40** for fixing the fence bracket **10** to soft ground.

According to another embodiment of the fence bracket, an alternative fence bracket **310** is described. The fence bracket **310** is shown in FIG. **9**. The fence bracket **310** is similar to the fence bracket **210** described above except that an alternative support **322** is provided on the front face **20**. The fence bracket **310** may be used as part of any of the previous aspects.

The support **322** has a hole **324**. The support **322** and hole **324** are used to connect the fence bracket **310** to a fence post. The support **322** and hole **324** may connect to a further bracket which holds the post.

While various embodiments of devices, systems, and methods have been described in considerable detail herein, the embodiments are merely offered as non-limiting examples of the disclosure described herein. It will therefore be understood that various changes and modifications may be made, and equivalents may be substituted for elements thereof, without departing from the scope of the present disclosure. The present disclosure is not intended to be exhaustive or limiting with respect to the content thereof.

Further, in describing representative embodiments, the present disclosure may have presented a method and/or a process as a particular sequence of steps. However, to the extent that the method or process does not rely on the particular order of steps set forth therein, the method or process should not be limited to the particular sequence of steps described, as other sequences of steps may be possible. Therefore, the particular order of the steps disclosed herein should not be construed as limitations of the present disclosure. In addition, disclosure directed to a method and/or process should not be limited to the performance of their steps in the order written. Such sequences may be varied and still remain within the scope of the present disclosure.

NO. FEATURE

A**1** axis
A**2** axis
A**3** axis
B plane
D**1** distance
D**2** distance
D**3** distance
P “public” side
R “restricted” side
10 bracket
12 body
14 base
16 side wall
18 side wall
20 front wall
21 hole
22 support
24 support
26 ancillary support
27 hole
28 tab
29 bent portion
30 aperture
32 hole
34 hole
40 ground penetrating member
42 flange
50 fence panel joining bracket
60A fence panel
60B fence panel
62A fence panel post
62B fence panel post
70 ancillary component; arm
72 aperture engaging portion
74 arm aperture
80 post
100 fence bracket system
110 ancillary component
120 ancillary support component
130 brace
132 brace plate
134 brace pole
136 brace pole support
210 fence bracket
222 support
230 aperture
310 fence bracket
322 support
324 hole
330 aperture
400 shape

402 folding region
404 notch, scallop
1000 fence assembly

The invention claimed is:

1. A fence bracket (10) suitable for use with a fence post, the fence bracket comprising:
a body (12) having a base (14), a front wall (20), a first side wall (16) and a second side wall (18); and
a support (22);
wherein the support (22) is provided on the front wall (20); and
the support (22) is configured to connect to a fence post; and
wherein the front wall (20) has a region comprising an aperture (30) suitable for receiving an ancillary component (70), wherein the region comprises a tab (28) extending from the front wall (20), and wherein a portion (29) of the tab (28) is bent such that the portion (29) extends substantially perpendicularly from the front wall (20).

2. The fence bracket (10) of claim 1 wherein the aperture (30) is located on the tab (28).

3. The fence bracket (10) of claim 1, wherein the base (14) further comprises a portion (32) suitable for receiving a ground penetrating member (40).

4. The fence bracket (10) of claim 1 wherein the body (12) further comprises an ancillary support (26) connected to the base (14) and/or front wall (20); wherein the ancillary support (26) is suitable to receive an ancillary support component.

5. The fence bracket (10) of claim 1 wherein the base (14) further comprises at least one hole (34) suitable for receiving an anchor bolt for fixing the fence bracket (10) to hardstanding or hard ground.

6. The fence bracket (10) of claim 1, wherein the fence bracket (10) further comprises a second support (24) provided on the front wall (20) and wherein the second support (24) is configured to connect to a fence post.

7. The fence bracket (10) of claim 6 wherein the aperture (30) has an axis (A1) that is coplanar with an axis (A2) of the first fence support (22) and coplanar with an axis (A3) of the second fence support (24)).

8. The fence bracket (10) of claim 6, wherein the first and second supports (22, 24) are tubes suitable for receiving a fence post.

9. A fence bracket system (100) comprising:
a fence bracket (10) comprising:
a body (12) having a base (14), a front wall (20), a first side wall (16) and a second side wall (18); and
a support (22);
wherein the support (22) is provided on the front wall (20); and
the support (22) is configured to connect to a fence post; and
wherein the front wall (20) has a region comprising an aperture (30) suitable for receiving an ancillary component (70); and
further comprising at least one ancillary component (110), wherein the at least one ancillary component (110) is an arm (70) and wherein the arm (70) comprises an aperture engaging portion (72) disposed at one end of said arm (70) configured to removably engage aperture (30) of the fence bracket (10), wherein the arm (70) further comprises an arm aperture (74) disposed at a second end of said arm (70) suitable for receiving a fastener (50).

10. The fence bracket system (100) of claim 9 wherein the at least one ancillary component (110) is at least one:
an arm (70); and/or
a fastener (50) and/or
a levelling device.

11. The fence bracket system (100) of claim 9 wherein the fence bracket system (100) further comprises an ancillary support component (120); wherein the ancillary support component (120) is one of:
a stabilizer; or
a brace; or
a camera pole; or
a solar light; or
a flag pole; or
a fixture.

12. The fence bracket system (100) of claim 9 wherein the at least one ancillary component (110) further comprises a fastener (50).

13. A fence bracket (10) suitable for use with a fence post, the fence bracket comprising:
a body (12) having a base (14), a front wall (20), a first side wall (16) and a second side wall (18); and
a support (22);
wherein the support (22) is provided on the front wall (20); and
the support (22) is configured to connect to a fence post; and
wherein the front wall (20) has a region comprising an aperture (30) suitable for receiving an ancillary component (70);
wherein the fence bracket (10) further comprises a second support (24) provided on the front wall (20) and wherein the second support (24) is configured to connect to a fence post; and
wherein the aperture (30) has an axis (A1) that is coplanar with an axis (A2) of the first fence support (22) and coplanar with an axis (A3) of the second fence support (24)).

14. The fence bracket (10) of claim 13 wherein the region comprises a tab (28) extending from the front wall (20).

15. The fence bracket (10) of claim 14 wherein the aperture (30) is located on the tab (28).

16. The fence bracket (10) of claim 13, wherein the base (14) further comprises a portion (32) suitable for receiving a ground penetrating member (40).

17. The fence bracket (10) of claim 13 wherein the body (12) further comprises an ancillary support (26) connected to the base (14) and/or front wall (20); wherein the ancillary support (26) is suitable to receive an ancillary support component.

18. The fence bracket (10) of claim 13 wherein the base (14) further comprises at least one hole (34) suitable for receiving an anchor bolt for fixing the fence bracket (10) to hardstanding or hard ground.

19. The fence bracket (10) of claim 13, wherein the first and second supports (22, 24) are tubes suitable for receiving a fence post.

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